

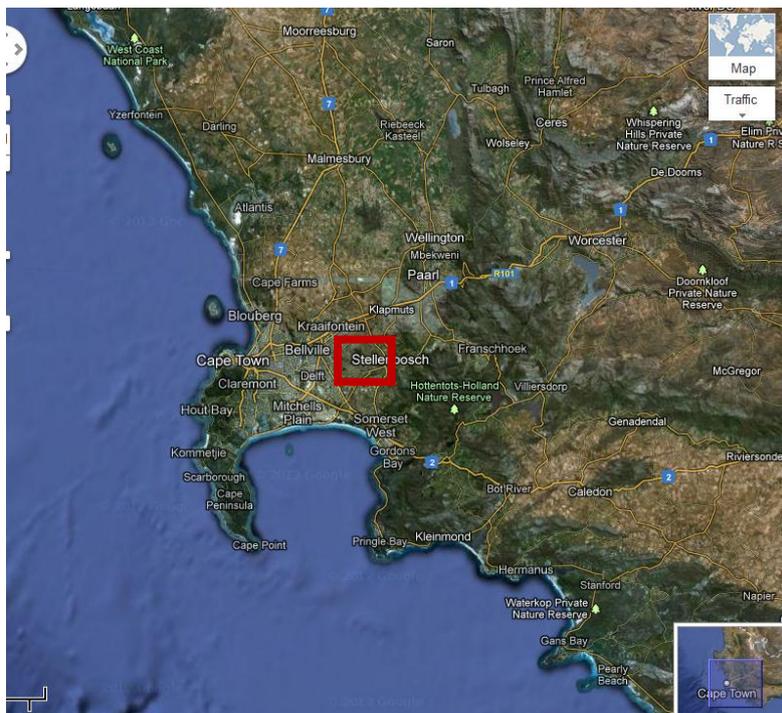


# CREDIBLE CARBON

**Project Name:** Spier Mob Grazing

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**Project Location:** Spier Farm, Stellenbosch, South Africa



The environmental impacts of current modes of food production are well documented (Clay, 2011<sup>1</sup>; WWF, 2012)<sup>2</sup>. Industrial agriculture and the associated land use contributes roughly one fifth of the historical greenhouse gas emissions, and proportionally more in Africa. A key economic challenge for African countries involves finding ways of producing and distributing adequate quantities of healthy food at affordable prices in ways that do not undermine the environmental resources on which society and the economy depends.

Stellenbosch is an agricultural region adjacent to the City of Cape Town in South Africa. Home to Stellenbosch University it has long-served as a base for agricultural innovation. The *Spier Mob Grazing* project draws on this heritage by demonstrating a mode of pasture-fed cattle and chicken farming. The approach displaces industrially farmed and processed grains as an animal feed and is associated with high level of soil carbon sequestration.

## Project Commencement Date:

1 January 2011

## Project Period:

10 years

## Estimated GHG Savings Schedule:

- Year 2011: 5,000 tons CO<sub>2</sub>e
- Year 2012: 11,000 tons CO<sub>2</sub>e
- Year 2013: 1,100 tons CO<sub>2</sub>e
- Year 2014: 1,100 tons CO<sub>2</sub>e
- Year 2015: 1,100 tons CO<sub>2</sub>e

## Project Partners:

The PACE Centre is a South African not-for-profit (NPO registration number 055-238-NPO), voluntary organisation whose registered office is at Office Annex, 2 Bokkemanskloof, Blue Valley Avenue, Hout Bay, 7806, South Africa. The registered postal address is 2 Bokkemanskloof, Blue Valley Avenue, Hout Bay, 7806, South Africa ([www.carbon.org.za](http://www.carbon.org.za)). PACE plays the role of **Project Proponent** in the project. PACE, as project

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<sup>1</sup> Clay, J (2011) World Agriculture and the Environment. Island Press.

<sup>2</sup> [http://wwf.panda.org/what\\_we\\_do/footprint/agriculture/impacts/](http://wwf.panda.org/what_we_do/footprint/agriculture/impacts/)

proponent, is responsible for registering the project with the Credible Carbon Registry, ensuring legal compliance of all transactions, marketing the project's carbon credits and ensuring accountable financial flows between buyers of credits, the project developer and the beneficiary community.

Spier BD Farm is a South African closed corporation (Reg 2008/254735/23) that engages in biodynamic agriculture in the Stellenbosch region. In this project Spier plays the role of **Project Developer**. As Project Developer Spier BD is responsible for the day to day running of the project, effective record keeping and reporting on expenditure of any carbon revenue generated. Spier BD Farm CC is has the registered postal address PO Box 86, Lyndoch, 7603, South Africa.

## **Methodologies Involved in Emission Reduction:**

Estimates of carbon savings are based on the principles contained in the VCS AFOLU standards for soil carbon approved in 2012. The methodologies depend on the net amount of permanently sequestered CO<sub>2</sub> in agricultural soils.

## **Leakages:**

Leakages associated with this project are related to the electricity required for irrigation considered immaterial when compared to baseline activities. Digestive methane produced by cattle is considered to be in the baseline of this project given that industrially produced beef emits equivalent methane.

## **Brief Description of the Project:**

Since April 2009 Angus McIntosh has managed a portion of Spier agriculture that involves 74 hectares of irrigated pasture. On this land high-density "mob-grazing" is practised. This technique involves frequent stock rotations (cattle are moved up to 6 times a day) aimed at "using livestock to mimic nature" and restoring carbon and nitrogen contained in livestock and poultry urine to the soil profile.

The project's pasture management is based on the high density grazing methodology developed in the 1980s and espoused by Andre Voison, Allan Savory and Ian Mitchell-Innes. The presence of a lot of animals in a small space for a short period of time deposits enormous amounts of manure and urine on the land and leads to healthy, vigorous pasture growth achieved without applying any fertilizer to the land. Cattle are moved between four and six times per day, laying hens, accommodated in our "Egg-mobiles", are moved every two days.

The project supplies chicken, beef and eggs to retail outlets and restaurants in the region, displacing the

supply of industrially produced animal protein to these markets. The climate change impacts of industrial cattle (in particular) and poultry farming are well-documented. The extent of natural ecosystems destroyed to create feed and pasture for cattle is greater than that for all other domestic animals and crops combined and cattle methane from cattle is a source of greenhouse gases. In this project no grains are farmed to provide animal feed and pastures have been recreated from highly compromised land, on which the fertile topsoil has historically been stripped.

No inorganic fertilisers are used in this project and no grains are used as animal feed, thereby disassociating the farming practise with industrial agriculture.

Soil analyses conducted by Brookside Laboratories confirm a significant and rapid enhancement of soil organic carbon (SOC) in the soil over an 18 month period between September 2011 and January 2013.

The farming operation employs 35 people, three of which act as continual herdsman to the cattle.



*Figure 1: The semi-deserted land prior to the project and the establishment of pastures using high density grazing. The machinery is being used to establish irrigation infrastructure.*



*Figure 2: The land once soil has been restored and pasture is established.*

The carbon savings resulting from this project are estimated to be in the order of 17,000 tCO<sub>2</sub> to date. Savings are the result of the additional CO<sub>2</sub> sequestered in the soil as the result of this mode of agriculture – a scope 1 emissions saving. The scope 3 saving relating to the obviated need to produce and import grain as a feedstock have not been included.



*Figure 3: Cattle move to an ungrazed camp in search of fodder: Cattle are moved up to six times per day.*

## **Capacity Building:**

A commitment has been made by the project developer to the Credible Carbon registry to invest at least 50% of the income generated by the sale of carbon credits in direct benefits to the employees. Once carbon revenue is realised, the nature of this benefit is to be decided by the employee group in consultation with the project proponent and the project developer, and will form part of facilitation of this project conducted by the project proponent. The impact of this revenue on employee well-being and poverty alleviation will be subjected to subsequent audits.

## **Funding:**

The project is funded by the project developer through the sale of agricultural products. The project

proponent has commissioned an independent audit on behalf of the Credible Carbon registry. Legal fees involved in procurement and sale of arising credits will be deducted from carbon revenue only when this revenue is realised. In line with the ambition of the Credible Carbon registry, the project will aim to return 70% of all carbon revenue to the project (.e. after audit fees, legal costs and registry fees).

## **Verified GHG Saving Calculations:**

The baseline from which scope 1 emissions savings have been calculated assumes no difference between digestive methane produced in this project and that produced by industrially farmed cattle and poultry. The key carbon saving accredited to this project involves the sequestration of carbon in manure and urine in the soil, as opposed to the norm in which this carbon is released as volatile CO<sub>2</sub> into the atmosphere.

Early estimates based on soil analyses conducted by Brookside Laboratories, indicate that the project sequestered 17,000 tCO<sub>2</sub> per annum as soil organic matter in a 19 month period between soil samples in September 2011 and January 2013. Verification of this volume is currently subject to an independent audit report being conducted by the company *C4 EcoSolutions*.

## **Monitoring and evaluation:**

The project seeks to generate revenue from the sale of carbon credits in the Credible Carbon Registry. The registry requires an independent audit of all projects in order to answer four definitive questions:

- i. Is the project real?
- ii. Is the described technology in place and functioning in accordance with its design specification?
- iii. Are the estimates of greenhouse gas emissions reduction reasonable in terms of accepted international standards and unbiased towards buyer or seller?
- iv. Is there a discernible impact on poverty?

The first two questions are established during a site visit conducted by the auditor.

Estimates of CO<sub>2</sub>e savings are established based on independent soil analysis conducted in September 2011 and January 2013 and the conversion of soil organic carbon (which has been measured and documented by Brookside Laboratories) to CO<sub>2</sub> based on the soil type and the bulk density of the soil. The conversion of changes in soil organic carbon (SOC) to amount of sequestered CO<sub>2</sub> is based on a standard formula, but an independent expert from C4 EcoSolutions will verify whether or not the reported changes in SOC are plausible and accurate, and whether or not the sequestered carbon is likely to prove permanent given the soil management practices. Verifying the extent of land under this particular mode of cattle production and

correlating soil analyses with areas of land on the farm will form an important component of this audit.

The fourth question is not subjected to a quantitative test, but it should be obvious to an informed independent auditor that the project makes a contribution to poverty alleviation, risk reduction for the poor and the breaking of the vicious cycles of poverty and ecological degradation. Spier has a corporate culture and track record of constructive human resource management, investing in upliftment of communities and environmental stewardship – the company founded and has supported the Sustainability Institute that now forms part of Stellenbosch University and is recognised internationally.

This project, in order to ensure compliance with the registry standard on poverty, has committed to spending 50% of the carbon revenue on direct employee benefits. The nature of these benefits is to be decided by the employee group in consultation with the project developer and project proponent.

**Annex A:**

**Changes in soil organic carbon per farming bloc**

**Annex B:**

**Soil analysis September 2011**

**Annex C:**

**Soil analysis January 2013**